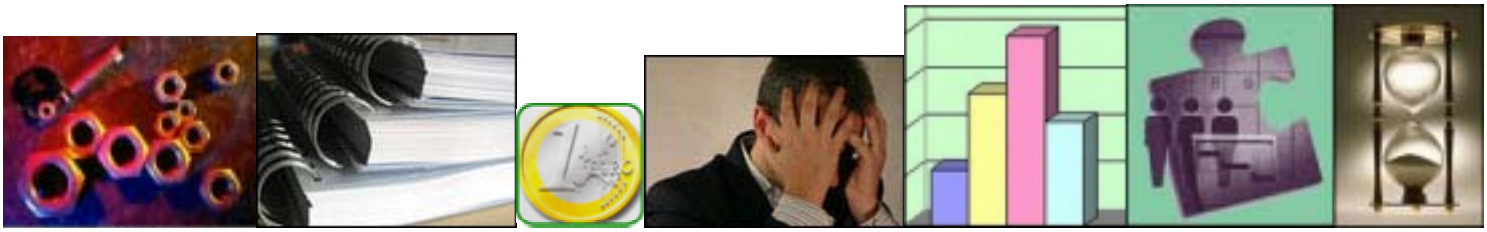


N° 5 – April 2007

Ident-PHF newsletter

The Newspaper to inform the « Non Production Materials Identification » network

Editorial

By Gérard CHAUMOND
(Project leader NPM-Non Production Materials- Identification in RENAULT group)

Current concrete actions in the community spirit of the PFI committee

As chief editor of this newspaper, my commitment during its launch at the beginning of the last year was to distribute 4 editions during 2006.
This objective having been realized, I scarcely asked the question of the future of this newspaper: the answer was naturally " yes, it is necessary to continue!... "
Among the significant headways, within the IDE @-Mosaïc-PFI committee, an opportunity offers itself to us in 2007: the operations launched collectively by large companies such as PSA Peugeot Citroën, Arc International France and Renault (see " the key event ")
These are an indispensable pre-requisite to the implementation from 2008 of a COMMON POOL of TECHNICAL DATA for CATALOGUES, a project decided by the PFI committee at the end of 2006
It is thus that several hundred thousand commercial articles are going to be modelled from this year, at the request of the large companies, according to the normalized concepts selected by this PFI committee: classification and characterization according to eCl@ss (structure ISO13584-PLib) and codification ISO 15459-4 / EAN.
I send in advance, in the name of the members of the PFI committee, my deepest thanks to the future contributors of this 2007 action

G. Chaumond

KEY EVENT

From the middle of April, when this N°5 of the Ident-PHF Newsletter goes out, a large-scale action is initialised : the

Launch of concrete industrial operations 2007

On the initiative of 3 of the large companies of the PFI committee (PSA Peugeot Citroën, Arc International France and Renault), this action aims at activating the mass generation of catalogue data. No less than 300 000 components will be modelled this year. This modelling is going to be made by the manufacturers of industrial components, holders of their brands and owners of the technical data of their products..

See page 2

THE REPORT...

PLib – Plib - Plib - Plib - Plib - Plib

A formal model of ontology for engineering, e-commerce and semantic Web: the model of the PLIB semantic dictionary **(continuation from the previous edition)**

3 Conceptual Model of a PLIB ontology : the schema of a semantic dictionary

We present in this section an overview of the representation and the contents of a ontology.

3.1 Formalism of description

The formalism of modelling used in PLIB is the language EXPRESS. Developed within the framework of the STEP project,…

see page 3

CONTENTS

KEY EVENT

Launch of the industrial concrete operations 2007 (continuation)

(continued from page 1)…,

Concepts and models :

The concepts of a unique modelling of every article of the business world are of course those, standardized or even normalized, driven by the PFI committee.

So, every manufacturer will first be invited to become acquainted with and to appropriate the classification/characterization of eCl@ss (version 5.1.1 for 2007), available free of charge on the eCl@ss portal www.eclass.eu; They will need to look in the structure for the classes relative to their various families of products and take into account the properties associated to each of these families (basic or standard properties of the family). These sets of properties constitute what we call models of description.

One of the basic properties is the EAN code: if the manufacturer does not yet manage such codes for his products, he will be invited to connect to the sites www.gs1.eu or www.gs1.fr to become acquainted with the process of how to obtain these codes

The process of creation and deposit of the data:

Every manufacturer will be invited by the Large Customer Companies to connect to the portal of the French Association of Engineers Maintenance Managers (AFIM), at the adress www.afim.asso.fr link « pièce/composant »(left column) . There he will validate the details of his company in the private "contacts" space and will study the process to be followed to prepare (on-line tool), control and deliver his data and associated documentation

Volumes, some figures, and milestones …

The 2007 objective is to document more than 300 000 industrial articles, at the request of 3 of the big principals:

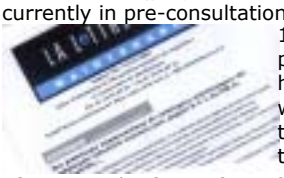
- **ARC INTERNATIONAL France** is going to contribute the manufacturers of 90 brands of PFI (common with Renault) then gradually 130 others (specific to AIF) .This company has also developed the tools (generation masks, data controls) available on the hosting AFIM Portal

Le portail AFIM

- **PSA PEUGEOT CITROËN** has already contributed the manufacturers of 100 brands of NPM (including 80 common with Renault) in a pre-operation launched in November, 2006
- **RENAULT** is going to contribute the manufacturers of 600 brands of NPM including, naturally, 100 from the operation LMPR-2005

Use of the data in 2007 and beyond …

Until a " common pool of technical data for catalogues " is available, forecast on the horizon 2008 (project of the committee PFI currently in pre-consultation phase with



10 solution providers), the hosted data will be put at the disposal of the members of AFIM in the form of one β-catalog such as announced in the Letter of the Maintenance (February 2007) allowing a consultation, a comparison, even the extraction of data of manufactured goods.

For more information about those operations, please go to www.afim.asso.fr

OTHER EVENTS

NPMI European Working Group (Non Production Materials Identification) Odette : Two other working sessions took place during this first quarter (spring term) 2007: **February 27th** on one hand, with a session, in the premises of **RENAULT** at **Boulogne Billancourt**, dedicated to the review of the result of the draft of the 4 parts of the recommendation (introduction, codification, classification / characterization and data models /exchange): the participants were thus able to express their points of view. Another session was held on **April 11th**, in the premises of the **VDA** (Verband der Automobilindustrie) in **Frankfurt**: the pursuit of the draft and the validation of the contents of the recommendation were the agenda of this session in which Audi, PSA Peugeot Citroën, Renault, Siemens, RS-Components, participated.

IDE@-Mosaïc-PFI Steering committee: 3 new sessions of this committee again took place this quarter:

- A session held February 1st allowed, besides a presentation of the catalogue data pool solution of Access-Commerce / Exsyde, to take 3 important decisions:
  - **Membership** of the PFI committee (via AFIM) in the Steering Committee of **eClass;**
  - Agreement on a temporary solution of hosting of the **data of the PSA, Renault and AIF operations** on the site of **AFIM** with exploitation of these data by the latter for its members
  - Preparing a **TIC-PME** file to try to obtain a **government subsidy**
- Another session, on February 28th, led to define the principles and the process of the 2007 operation of massive generation of technical data of catalogues, its hosting and its exploitation on the portal of the AFIM
- A 3rd session held March 29th was the occasion to welcome TOTAL, as new member, in our committee (Veronique VIDAL); this session allowed us to finalize the massive operation of production of article data for 2007, to envisage new actions of communication and to prepare our intervention in the next " steering committee " of eCl@ss in which the PFI committee will participate for the 1st time in the person of Claude PICHOT, chairman of AFIM

French Experimental Standard XP Z 99-005: Sessions of the workgroup CN-DSTI GT2 (Committee of Normalization – Scientific, Technical and Industrial Data - Workgroup 2) continued on January 10th, February 08th and March 08th in the premises of the Afnor (St Denis + Web-conference). The leading of a brainstorming, during the first of these 3 sessions, resulted in 38 keywords which were distributed over 4 preliminary parts of the standard (foreword, introduction, application field, business case) and on the 4 main chapters relative to its contents (structuring of the data, the format of exchange, ontologies and community animation). 2 other sessions were dedicated to the collective finalisation of the draft of the introduction on one hand and the field of application and a part of the business case on the other hand.

Note that this workgroup is open to all, and that we can therefore welcome new volunteers on this subject (contact for that purpose pascal.poupet@afnor.org)

Quel est le problème ? What's the problem ?

The video-clip " the problem of catalogues " (7mn, recorded further to the June 10th 2005

Renault convention is now available in French and **in English** on the site www.afim.asso.fr, link"pièce / composant"

ECl@ss Steering committee

: The PFI committee, represented by Claude PICHOT, chairman of the AFIM (French Association of Engineers and Maintenance Managers), is going, for the first time, to participate in the "Steering Committe" of eCl@ss on April 19th. Indeed, the PFI committee recently became a member of eCl@ss.

TIC-PME 2010

The PFI committee submitted a dossier within the framework of the call for projects TIC-PME 2010 (Ministry of Economy, Finances and Industry) to obtain a financing of our project: this subject, atypical with regard to the frame TIC-PME, considered as rather transverse could nevertheless be the object of a particular consideration.

After EDF in November, it is **TOTAL** who has just joined the PFI committee. Veronique VIDAL, e-procurement manager, who participated in the session of March 29th, announced the interest of Total for the subject. The person directly concerned finally could be Christian MONGIS. Keep in mind that TOTAL also intends to become directly a member of the "Steering Committee" of eCl@ss

In 2006 **"Ident-PHF"Newsletter**, was distributed to more than 400 addressees (numbers 1 - 4)
This Number 5 has been distributed in more than **800** copies: besides the usual addressees, all the manufacturers (around 600 in total) involved in the 2007 operations of generation of data for catalogue also received this edition of April 2007

THE REPORT

PLIB

(SUITE P.1)

… the objective of EXPRESS [ISO10303-11: 1994] is the description of models of information with the aim of the exchange of data representing this information in a reliable and unambiguous way . In the EXPRESS language, the main accent is put on the precision of the model and quite particularly on the constraints that the data have to respect to be accepted as corresponding to the model. This ensures the reliability of the represented information. EXPRESS is not only a notation allowing the modelling of the data, that is to say a simplified representation, possibly partially ambiguous, of information appropriate for purposes of exchange between human design engineers. It is also the formalism of specification, that is that it allows a completely unambiguous description able to be processed by machine.

An EXPRESS model, also called schema, defines a set of entities which represent objects to model linked to a mechanism of generalization / specialization. Every entity is defined by a set of attributes. Every attribute possesses a domain of values which can be a simple type (whole, real, enumeration), a type entity, a union of types or an aggregate (set, list,…). Functional and assertional constraints restrict the interpretations of the model. EXPRESS possesses at the same time a graphic version, similar to UML, and a textual version containing in particular a typical OCL formalism , integrated and compilable. An EXPRESS model defines automatically an explicit format, called physical file, of representation and exchange of instances corresponding to this model. The compilation of an EXPRESS model allows the generation of interfaces of data bases corresponding to this model, as well as programs for reading and writing of physical files. It also allows the verification of the respect of the constraints of integrity on a population of instances. In PLIB, EXPRESS is used according to an approach of meta-modelling in which every ontology is represented in the form of instances of a (meta-)scheme of ontologies. This (meta)schema also defines a generic model for the representation of the concepts corresponding to any PLIB ontology. Numerous constraints of integrities are defined in the scheme to ensure at the same time the internal coherence of every PLIB ontology, and the correspondence of the instances of concept to the ontologies which they reference. These constraints restrict the authorised interpretations of the (meta-) schema of ontology and of the ontologies which are in accordance with it. They endow both levels of models with one "settable" semantics. Specified formally, these constraints can be verified consistently by IT agents whose protocol of dialogue contains a reference to the ontology and thus ensure the reliability of the dialogue.

3.2 The schema of semantic dictionary
We describe in this section the principles of bases of the representation of an ontology by a semantic PLIB dictionary.

3.2.1 Identification of concepts of a PLIB ontology
A PLIB ontology allows the description of classes, properties, domains of values and instances. A class is a collection of objects defined in intention. A property is a binary relation between two classes or between a class and a domain of values (the term "attribute" is used for the meta-describers of classes and properties). A domain of values is a mathematical set defined in extension or in intention. An instance represents an object belonging to a class. Finally, any ontological definition emanates from a certain source which assumes the responsibility. To be able to reference in an unambiguous way whatever of these concepts, PLIB contains a universal plan of identification (GUI :" Globally Unique Identifier "). Every potential source is associated to one to an unique identifier (generally preexisting for every organization or establishment, for example in France it is built on various codes SIRET or SIREN). Every source then has to give a unique code to each of the classes that it defines. Finally the code of a property must be unique for a class and all its subclasses. The concatenation of these codes allows then to identify in a unique and universal way each of the concepts above. It is this simple code, called a BSU (BASIC Semantic Unit), which will be sufficient to reference to characterize a class or a property. This code can thus be used to resolve the fourth problem evoked in the introduction of this paper. The example below represents the BSU of a very precise technical property defined in the PLIB ontology normalized in the standard IEC 61360-4:

0112/2///61630-4 CCD 124-002 AAF307-005

Identification of the factor of permeability of a magnetic material with a frequency given (the code 0112/2 /// 61630-4 indeed characterizes the standard the IEC 61360-4 as source)

The next edition will address the fundamental principles of the PLIB modelling of ontologies

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In Brief…

During this 1st quarter, the **CERN** (European Organization for Nuclear Research), in the person of Christophe Mugnier, (Methods manager / Power Converter Group / AB Department) announced its interest for the PFI initiative , in the context of implementation of a centralized management of spare parts needed for the maintenance of the installations.

eCl@ss

Besides the committee PFI which has just joined the Steering Committee of eCl@ss, two French manufacturers, associated to our initiative, could also join individually; they are TOTAL and SCHNEIDER ELECTRIC. The negotiations are in progress.

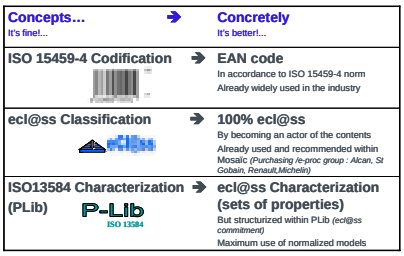
March 6th, 2007, a session of the Committee of Normalization for Scientific, Technical and Industrial Data (**CN DSTI**); was held at **AFNOR** ST DENIS, the essential points were:
- Resumption of part 2 of the guide ISO-IEC CD77 to acquire its international validation
- New OntoML arrived … The document structured in 3 parts is henceforth easier to implement
- Validation of the standard 13584-26 (PLib in exchange format .csv)
- Standard ISO 29002 common to OTD and PLib
- Contact to be established with the BNAE (French Office of Normalization of Aeronautics and Space) to which the use of the PLIB concept was presented by Pr Pierra and aroused a great interest.

OPERATIONS 2007 in the starting blocks: *The operations of massive generation of technical data for catalogues planned for this year (see the key event in page 1 and 2) are about to be launched.*
PSA Peugeot Citroën has already launched the operation on its own account in November, 2006, but it is on ***APRIL 15th, 2007*** *when the official launch will take place of these operations respectively by RENAULT and ARC INTERNATIONAL France, understanding that PSA will take advantage of the launch to re-clarify certain points with its manufacturers already under way.*

FOR FURTHER NOTE....

In its 2006 **activity report** , **GALIA** (Groupement pour l'Amélioration des Liaisons dans l'Industrie Automobile, member of ODETTE INTERNATIONAL) made a wide echo, in its Column relative to the current projects, to the Project NPMI (Non Production Materials Identification)

Besides the reminder of the objectives of this group, its constitution, and the history of its launch within GALIA, it is also a reminder of the concepts of base and their translation in concrete terms which are described in this document.



While PSA Peugeot Citroën , under the animation of Agnès WINTZ, continues with a **workgroup** to develop or improve the ontologies of the **Programmable Controllers** and the other constituents of electric **automatisms** of ecl@ss, Renault for its part should soon launch and manage working groups to elaborate the ontologies for 15 or 16 families of precise products, not yet described in eCl@ss. These families of products are respectively:

- In the field of the **electric materials for safety** : Movable guard, trip device or mats, bumper, intervention box, guard locking and trip device
- In the field of the specific **car manufacturing**: welding resistance electrodes, electrode holder/extension, low impedance cables, flakes shunt, manual welding gun, robot welding gun , welding transformers, fittings, multifunctional pilots and punches for stamping

These families are at present the object of a validation by an expert committee of eCl@ss, and the actors should soon be sought …

To note… the fruitful collaboration between 3 large customer companies for the preparation of the 2007operations :

- Renault gave its experience of the LMPR-2005 operation and the large-scale extension of the number of manufacturers in progress,
- PSA Peugeot Citroën supplied the guide of modelling, stemming from its operation launched last November
- Arc International France developed the tool of generation of models (masks) and control of the data (certification)

Terminology

PHF (Produits Hors Fabrication) : Non Production Materials **(NPM)** , *named also* **PFI** (produits de fonctionnement Industriels **EAN :** European Application Number ; **PLib** (Parts Library) : standard concept of ISO 13584 ; **LMPR** (Liste des Matériels Préconisés Renault) : List of Renault recommended components ; **AFNOR** (Association Française de Normalisation) : French Association for Normalization ; **ISO** : International Standards Organization

Contacts & useful links

Internet Sites

- about **PFI** initiative : www.galia.com (=> groupes de travail => PFI) , www.afim.asso.fr et www.odette.org
- about concrete operations : www.afim.asso.fr (=> gestion des actifs => pièce/composant)
- about **PLib** : www.lisi.ensma.fr or www.plib.ensma.fr or www.toplib.com (Toshiba)
- about **eCl@ss** : www.eclass-online.com ou www.eclass.de ou www.eclass.eu
- about **EAN** : www.gs1.org ou www.gs1.eu ou www.gs1.fr

Aide-mémoire of working groups (currently in place)

NPMI Working Group (within ODETTE, group of European vehicle and automotive parts manufacturers): elaboration of a European recommendation for the automotive field on the basis of the 3 PFI concepts.

Enlarged Committee IDE@ (Gifec-Fenetec) **–Mosaïc** (Alcan, Arcelor, EDF, Alstom, Renault, St Gobain, ..) **– PFI** (Renault, PSA, Arc International, EDF, TOTAL, Schneider Electric, AFIM,) + Gimelec: French interprofessional committee for the promotion of the convergence of e-catalogs (purchasing and technical).

Normalization Commission Afnor CN-DSTI GT2: Elaboration of a French experimental standard XP Z99-005 reusing the contents of the PFI recommendation published by Galia in 2004..

PFI **Working Group** for elaboration of **ontologies** for **electric materials for safety** and **specific consumables for car-body manufacturing**:to (re)start soon (animation by Renault)

Working Group between IDE@, and eCl@ss: animation by GIFEC, participants SAF-Air Liquide welding (manufacturer)

Working Group for the elaboration or improvement of **ontologies** for **programmable controllers** and **automatisms components** : PSA Peugeot Citroën animation with participation of Renault, PSA , Schneider Electric, Siemens, …

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